UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/577,110 | 04/25/2006 | Wilhelmus Sebastianus Ketelaars | NL 031282 | 1172 |

24737     7590     08/25/2009
PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

| EXAMINER |
|---|
| BEMBEN, RICHARD M |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2622 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 08/25/2009 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>11 August 2009</u>.

2a)☐ This action is **FINAL.**       2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) <u>1-11</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-11</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1.    A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection.  Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114.  Applicant's submission filed on 11

August 2009 has been entered.

### *Response to Arguments*

2.    Applicant's arguments with respect to claims 1-11 have been considered but are

moot in view of the new ground(s) of rejection.

3.    Even though the Applicant's arguments are moot, consider the following

comments:

        a.    In Applicant's Remarks (page 5, line 29 – page 6, line 2 and page 7, lines

        3-4), Applicant states that Fisher fails to disclose selecting a next picture to be

        stored based on a desired amount of overlap.  Applicant supports this position by

        arguing (page 5, lines 24-29) that the still images that are used to create the

        composite image in Fisher must already be saved.  This seems to imply that in

        the Applicant's invention "next one of the pictures in the sequence" which "is

        selected for being stored in the memory based on the amount of overlap" is *not*

        already saved.  However, if this is the case, it is unclear how the camera can

compute the "amount of overlap regarding a picture content with a previous one of the pictures stored in the memory". In fact, it is impossible for the camera to compute the amount of overlap unless the "next one of the pictures" is already captured and at least temporarily saved. Applicant's specification discloses placing the "next one of the pictures" in "cache 104", i.e. the "next one of the pictures" is already saved, (Applicant's Specification, page 6, lines 19-21 and Figure 2, steps 206 and 208). Since it is a necessary step to save the "next one of the pictures in the sequence" in order to compute "an amount of overlap regarding a picture content with a previous one of the pictures stored in memory" and such step is omitted in the independent process claims 1, 6 or 7, please see the 35 USC 112 rejection below. Note that these requirements are disclosed by Fisher in column 4, line 33 – column 5, line 57 and Figures 3-4, column 7, lines 38-43 and Figure 7, column 8, lines 12-48 and Figure 7, and column 9, line 4 - column 10, line 9 and Figure 8. Note that the "stitching" program is within the memory, i.e. the stitched image is within the memory.

b.      In Applicant's Remarks (page 6, lines 27-28), Applicant states that Fisher "is silent with regard to the amount of overlap that is needed" in order to stitch the images. It is unclear how the "amount of overlap that is needed" in order to stitch the images is relevant to the claims presented. Please clarify.

c.      In Applicant's Remarks (page 7, lines 20-21), Applicant states that "the gap referred to in Tanaka represents a gap in the viewing angles and not adjacent (or in the case of Tanaka the same) still picture[s]". Examiner disagrees

and Tanaka explicitly states in column 17, line 66 – column 18, line 4:

"Accordingly, it is possible to generate a great number of interpolation **images**
between the input images taken from the photo-taking **viewpoints** at fine
intervals so as to **fill the gap** between them, and an image smoothly changing in
accordance with the movement of the viewpoint can be obtained."  Emphasis
added.

d.       Despite Applicant's denial of "any statement, position or averment stated
in the Office Action" (Applicant's Remarks, page 8), the Applicant did
acknowledges (on page 6, lines 7-11 of Applicant's Remarks filed 18 March
2009) that Fisher discloses that "a warning message is provided" to a user when
a "calculated overlap would cause there to be a lack of coverage", i.e. a gap.
Since Fisher teaches providing a warning when a gap is detected, Fisher
explicitly discloses a teaching of monitoring the pictures taken to determine
whether a desired overlap has been achieved.  This was discussed in the
previous final Office Action dated 14 May 2009.

### *Claim Rejections - 35 USC § 112*

4.       The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

5.       **Claims 1, 6 and 7 rejected under 35 U.S.C. 112, second paragraph,** as being
incomplete for omitting essential steps, such omission amounting to a gap between the
steps.  See MPEP § 2172.01.  The omitted steps are:  saving or storing (in at least a

temporary memory) the "sequence of still pictures" taken by the camera. Also refer to

***Response to Arguments*** 3(a), *supra*.

## *Claim Rejections - 35 USC § 103*

6.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.      **Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

**US Patent No. 7,133,068 issued to Fisher et al, hereinafter "Fisher", in view of US**

**Patent No. 6,233,004 issued to Tanaka et al., hereinafter "Tanaka" in further view**

**of US Pub. No. 2004/0189849 filed by Hofer.**

Regarding **claim 1,** Fisher discloses a digital camera *(refer to c. 3, l. 14 – c. 4, l.*

*47 and Figures 1-3)* having a memory *(refer to c. 4, l. 33 – c. 5, l. 57 and Figures 3-4)*

and an operational mode wherein:

the camera takes a sequence of still pictures *(refer to c. 7, ll. 12-27 and Figure*

*7)*;

a next one of the pictures in the sequence is selected for being stored in the

memory based on an amount of overlap regarding a picture content with a previous one

of the pictures stored in the memory *(refer to c. 4, l. 33 – c. 5, l. 57 and Figures 3-4, c. 7,*

*ll. 38-43 and Figure 7, c. 8, ll. 12-48 and Figure 7, c. 9, l. 4 – c. 10, l. 9 and Figure 8, and*

*the discussion in* ***Response to Arguments****)*; and

the camera processes the pictures stored in the memory so as to create a composite picture *(refer to c. 7, ll. 43-62 and c. 8, l. 3)* and determines whether said composite picture includes an area lacking coverage by the pictures stored in said memory *(refer to c. 8, ll. 33-38, also see the discussion in **Response to Arguments**).*

However, Fisher does not disclose that a content of said area [lacking coverage] is determined by interpolating pixel data from edges of said area of said composite picture lacking coverage and providing directions of said camera to a position to cover said area lacking coverage.

Tanaka discloses a system and method wherein a camera takes a sequence of still pictures and creates a composite picture wherein the system performs interpolating pixel data from edges of said area of said composite picture lacking coverage *(refer to c. 17, l. 60 – c. 18, l. 4).*

It would have been obvious to one of ordinary skill in the art at the time of the invention to interpolate pixel data from the edges of said area of said composite picture lacking coverage, i.e. a gap in the sequence of images, as disclosed by Tanaka in the system disclosed by Fisher such that when a "lack of coverage" or gap is detected *(as disclosed by Fisher, see the discussion in **Response to Arguments**)*, the system can fill the gap and "an image smoothly changing in accordance with the movement of the viewpoint can be obtained" *(see Tanaka, c. 18, ll. 2-4).*

However, Fisher in view of Tanaka does not discloses that directions are provided to take at least one extra still picture to cover said area lacking coverage when interpolating pixel data from edges of said composite picture lacking coverage fails to

provide coverage of said area and integrating said at least one extra still picture into said composite picture.

Hofer discloses a system and method wherein a camera creates a panoramic image by capturing a first image at a first endpoint, capturing a second image at a second endpoint wherein there is a substantial gap between the first and the second endpoint, and then subsequently provides directions (to a user) to take at least one extra image to cover the gap *(refer to [0046]-[00570 and Figures 8-11)*. It is clear in Hofer's disclosure that interpolating pixel data from edges of the first image and the second image would fail to provide coverage of the gap, e.g. in Figure 8 the middle of the mountain range could not be provided cover by only capturing the left and right side of the mountain range and then interpolating.

Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to try to ("obvious to try") use the gap filling system and technique disclosed by Hofer in the system and method disclosed by Fisher in view of Tanaka when pixel interpolation fails to provide coverage. Filling the "gaps" in panoramic images taken by digital cameras is a problem recognized in the art (Tanaka's entire disclosure is directed to filling the gaps between images in order to provide a continuous image). There are only two possible methods available to fill the gap between two images, i.e. interpolating as disclosed by Tanaka or capturing another image that fills the gap as disclosed by Hofer. One of ordinary skill in the art would have pursued Hofer's gap filling technique (capturing another image) when Tanaka's gap filling technique (interpolation) was insufficient, e.g. the gap being large, and could expect success in filling the gap (e.g.

capture of the middle of the mountain range in Hofer, Figure 8).  Refer to MPEP 2143 (E).

Regarding **claim 2**, refer to the rejection of claim 1 and Fisher further discloses a sensor for determining information representative of respective relative coordinates of the camera when taking respective ones of the pictures *(refer to c. 6, ll. 14-26, Figure 5, "motion sensor 516", c. 7, l. 43 – c. 8, l. 11)*.

Regarding **claim 3**, refer to the rejection of claim 2 and Fisher further discloses that the information is used for controlling the creating of the composite picture using a stitching algorithm *(refer to c. 7, ll. 28-62 and c. 8, ll. 49-59)*.

Regarding **claim 4**, refer to the rejection of claim 2 and Fisher further discloses that the information is used to determine the next picture *(refer to c. 7, ll. 28-43)*.

Regarding **claim 5**, refer to the rejection of claim 1 and Fisher further discloses a detector for detecting said area in the composite picture lacking coverage by the pictures stored in the memory *(refer to c. 8, ll. 33-38 and the discussion in **Response to Arguments**)*.

Regarding **claim 6**, refer to the rejection of claim 1 and Fisher further discloses an electronic apparatus with the camera having a memory and an operation mode *(refer to the rejection of claim 1 and c. 5, l. 58 - c. 6, l. 39 and Figure 5)*.

**Claims 7-11** are method claims corresponding to apparatus claims 1-5, respectively.  Therefore, claims 7-11 are analyzed and rejected as previously discussed with respect to claims 1-5, respectively.  Further, refer to Fisher c. 9, l. 4 - c. 10, l. 9 and Figure 8.

### *Conclusion*

8.      Any inquiry concerning this communication or earlier communications from the
examiner should be directed to RICHARD M. BEMBEN whose telephone number is
(571)272-7634.  The examiner can normally be reached on 8:30AM-5:00PM.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Tran N. Sinh can be reached on (571) 272-7564.  The fax phone number for
the organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system.  Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a
USPTO Customer Service Representative or access to the automated information
system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RMB

/Sinh Tran/
Supervisory Patent Examiner, Art Unit 2622